ORDER NO. TSD-7506-241

Service Manual

Compact Stereo

FM/AM/FM STEREO RADIO AND RECORD PLAYER WITH CASSETTE DECK

SG-1020L

Specifications

AMPLIFIER SECTION

Power Output	MPO 2×7.5W (THD 5%, 8 ohms)
	RMS 2×5W (THD 5%, 8 ohms)
Frequency Response	40 Hz ~ 20 kHz
Input Sensitivity and Impedance:	
Tape	300 mV, 25k ohms
REC Out & Impedance	DIN; 35 mV, 80k ohms
Tone Control	+0 dB, −18 dB at 10 kHz

FM TUNER SECTION

Frequency Range	87.5 MHz ~ 108 MHz
Intermediate Frequency	10.7 MHz
Sensitivity	3.5μV (S/N 30 dB, MOD 40 kHz Deviation)
Image Ratio	30 dB (98 MHz)
Signal to Noise Ratio	60 dB (at 1 kHz, 60 dB, 75 kHz)
Distortion	0.5% (MONO) (at 1 kHz, 60 dB, 30%)
Stereo Separation	30 dB (at 1 kHz, 60 dB, 30%)

AM TUNER SECTION

Frequency Range	MW; 525 kHz~1605 kHz (572 m~187 m)
	LW; 145 kHz~285 kHz (2070 m~1050 m)
Intermediate Frequency	455 kHz (UK: 470 kHz)
Sensitivity	MW; 100 μV/m for 50 mW
	LW; 300 μV/m for 50 mV
Image Ratio	MW; 38 dB (1 MHz)
	LW; 43 dB (220 kHz)

RECORD PLAYER SECTION

Turntable	23 cm (9″)
Turntable Speeds	33-1/3 and 45 r.p.m., 2-speeds
Phonomotor	AC 2-Pole Induction
Cartridge	Ceramic (SPC 6)
Stylus	Sapphire (SPJ4)
Stylus Pressure	7 g
Wow & Flutter	0.20% WRMS

TAPE DECK SECTION

Deck System	Auto Stop Cassette System
Track System	4 Track, 2 Channel
Recording System	AC Bias, 54 kHz
Erasing System	AC Erase, 54 kHz
Tape Speed	4.75 cm/sec. (1-7/8 i.p.s.)
Frequency Response	70 Hz ~ 10 kHz
Wow & Flutter	0.25% WRMS

POWER CONSUMPTION 35 W

POWER SUPPLY AC 110 V, 120 V, 220 V, 240V, 50/60 Hz

DIMENSIONS (H×W×D)

Center Unit	163 mm×500 mm×372 mm
	(6-13/32″)×(19-11/16″)×(14-21/32″)

WEIGHT

Center Unit	7.1 kg (15 lb. 11 oz.)

SPEAKER SYSTEMS (UK only)

Speaker	One way, 16 cm (6-1/2″)
Impedance	8 ohms
Dimensions	360 mm×230 mm×147 mm
	(14-3/16″)×(9-1/16″)×(5-25/32″)

* Specifications are subject to change without notice for further improvement.

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DISASSEMBLY INSTRUCTIONS

■ To Replace Components

1. Remove five (5) knobs from front panel.
2. Remove eight (8) bottom board mounting screws Nos. 1 ~ 8, as shown in Fig. 4.
3. Unplug three (3) connectors (5P, 3P and 5P) from AF PC board.
4. Remove eight (8) chassis mounting screws Nos. 9 ~ 16, as shown in Fig. 4.
5. Unsolder faulty components and replace it with a new one.
6. To reassemble, reverse above procedure.

■ To Remove Cassette Deck

1. Remove bottom cover. (Refer to instruction 2. above)
2. Unplug two (2) connectors from AF PC board.
3. Remove four (4) cassette deck mounting screws Nos. 17 ~ 20, as shown in Fig. 4.

■ To Remove Cassette Cover

1. Push Eject Button to open cassette cover.
2. Carefully push stops of cassette cover located on both sides, as shown in Fig. 1.
   Then cassette cover can be removed from cabinet.

■ To Replace Capstan

When replacing capstan, carefully set into edge to the idler wheel basing on two positions, as shown in Fig. 2.

■ To Replace Stylus

1. Lift the pickup arm to a position that will make the stylus accessible.
2. Loosen the holding screw and gently remove the worn stylus with a suitable screwdriver, as shown in Fig. 3.
   Do not use an oversize screwdriver.
3. Put new stylus into correct position, making sure the stylus fits properly into the armature.
4. Tighten the holding screw no more than necessary to keep it from shaking loose.

■ To Replace Cartridge

1. Lift the pickup arm to a position that will make the cartridge accessible.
2. Remove cartridge holding screw, as shown in Fig. 3.
3. Disconnect four (4) connectors from cartridge terminals gently.
4. Fit the new one. (When installing wires, make sure they fit to the correct positions in the connector.)
5. To reassemble, reverse above procedure.

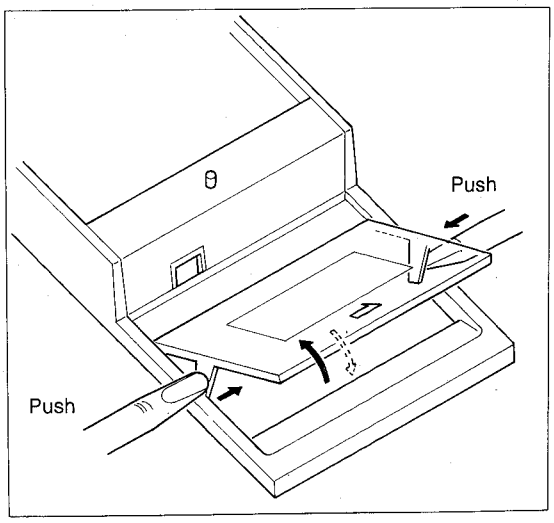


FIG. 1

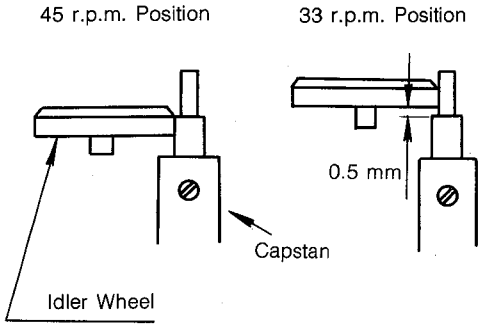


FIG. 2

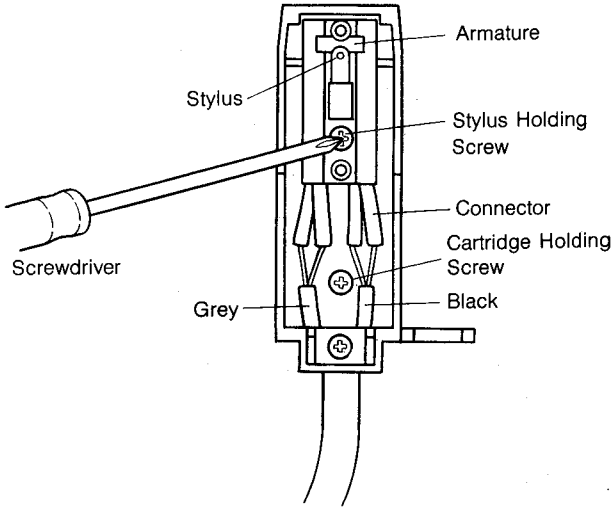
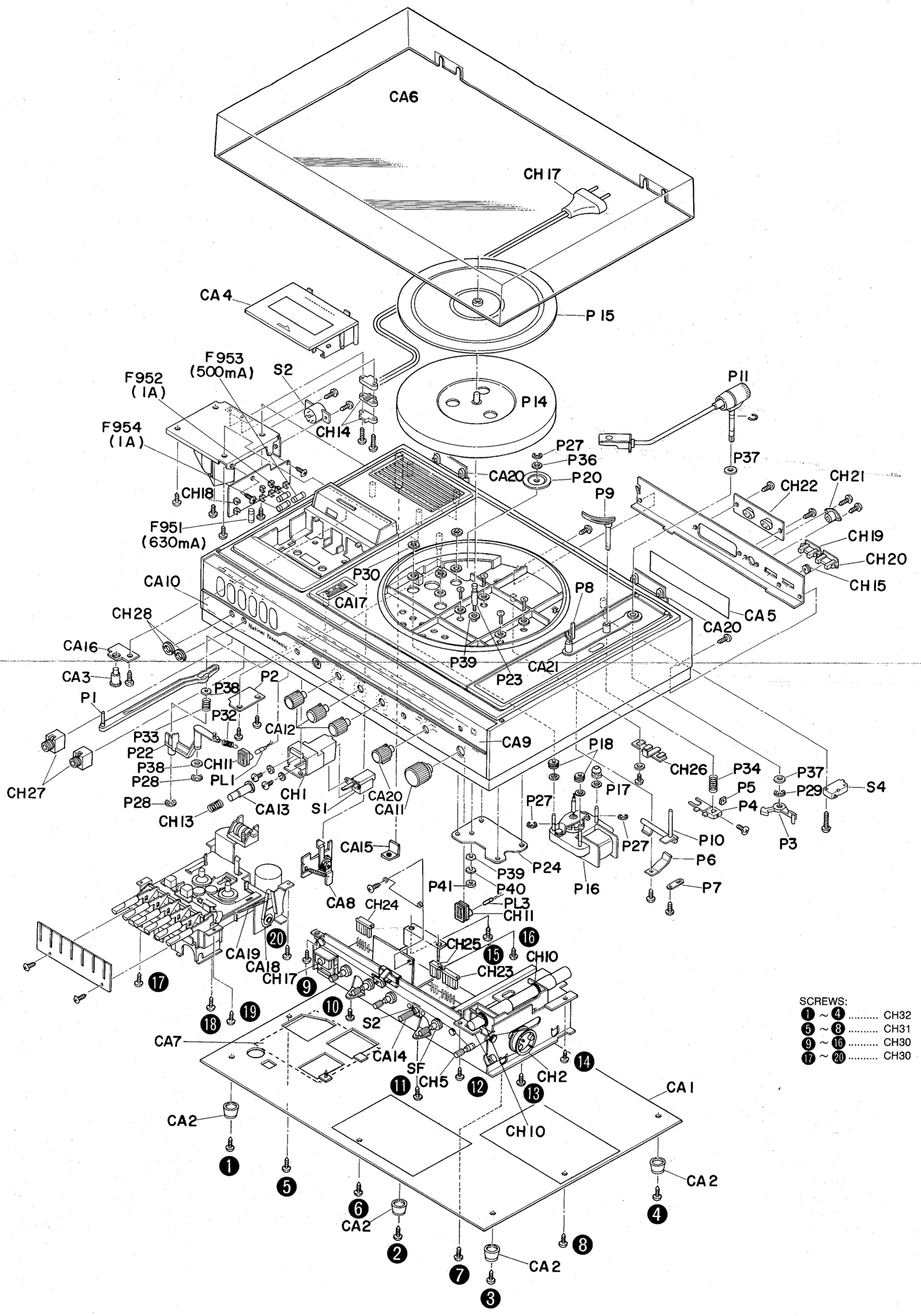


FIG. 3

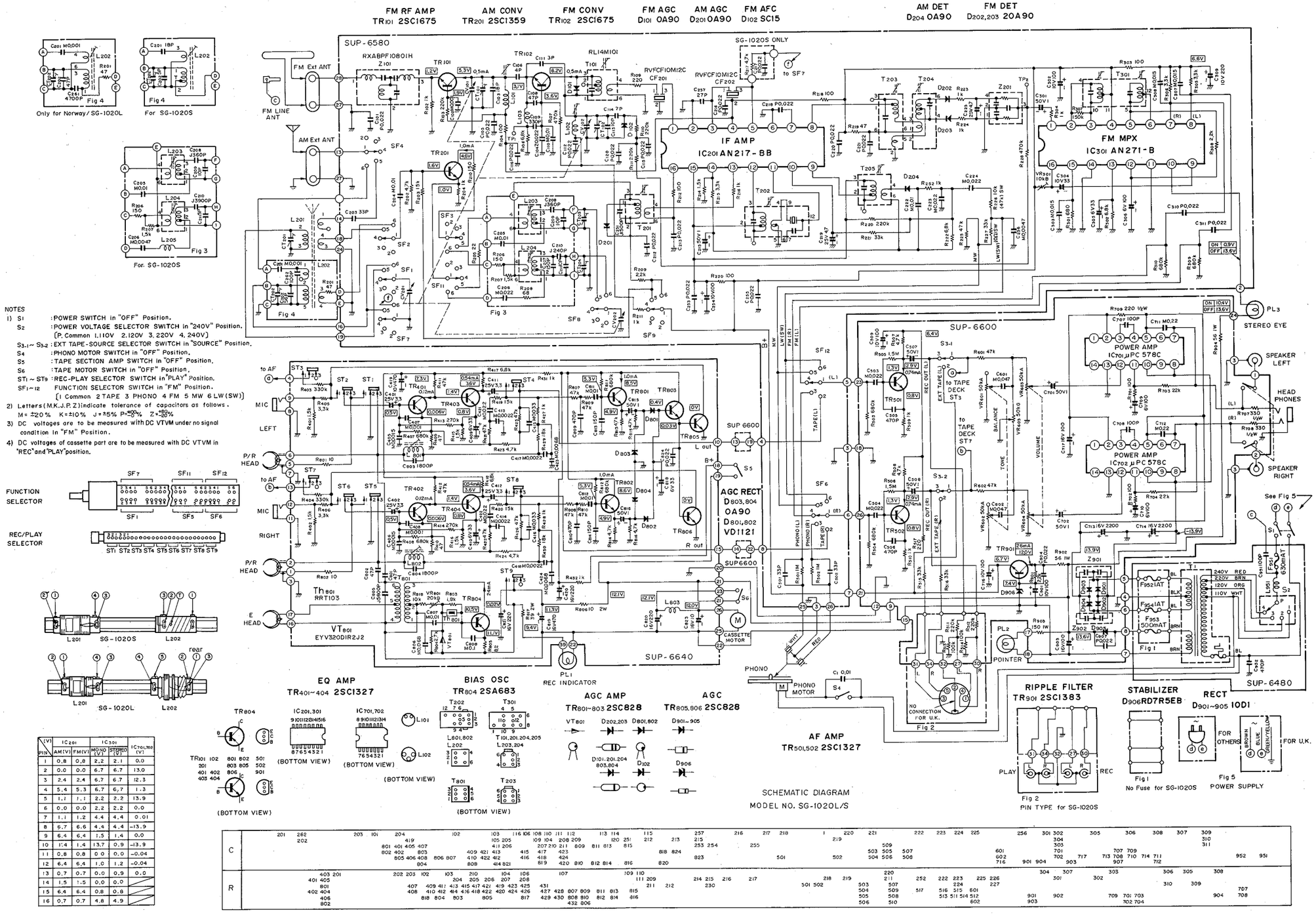


SCREWS:

1 ~ 4	CH32
5 ~ 8	CH31
9 ~ 16	CH30
17 ~ 20	CH30

FIG. 4

SCHEMATIC DIAGRAM OF MODEL SG-1020L



NOTES

1) S1 :POWER SWITCH in "OFF" Position.
S2 :POWER VOLTAGE SELECTOR SWITCH in "240V" Position. (P. Common 1. 110V 2. 120V 3. 220V 4. 240V)
S3-1~S3-2 :EXT TAPE-SOURCE SELECTOR SWITCH in "SOURCE" Position.
S4 :PHONO MOTOR SWITCH in "OFF" Position.
S5 :TAPE SECTION AMP SWITCH in "OFF" Position.
S6 :TAPE MOTOR SWITCH in "OFF" Position.
ST1 ~ ST9 :REC-PLAY SELECTOR SWITCH in "PLAY" Position.
SF1~12 FUNCTION SELECTOR SWITCH in "FM" Position. (1 Common 2 TAPE 3 PHONO 4 FM 5 MW 6 LW(SW))

2) Letters (M,K,J,P,Z) indicate tolerance of capacitors as follows. M=±20% K=±10% J=±5% P=+100%-0% Z=+80%-20%

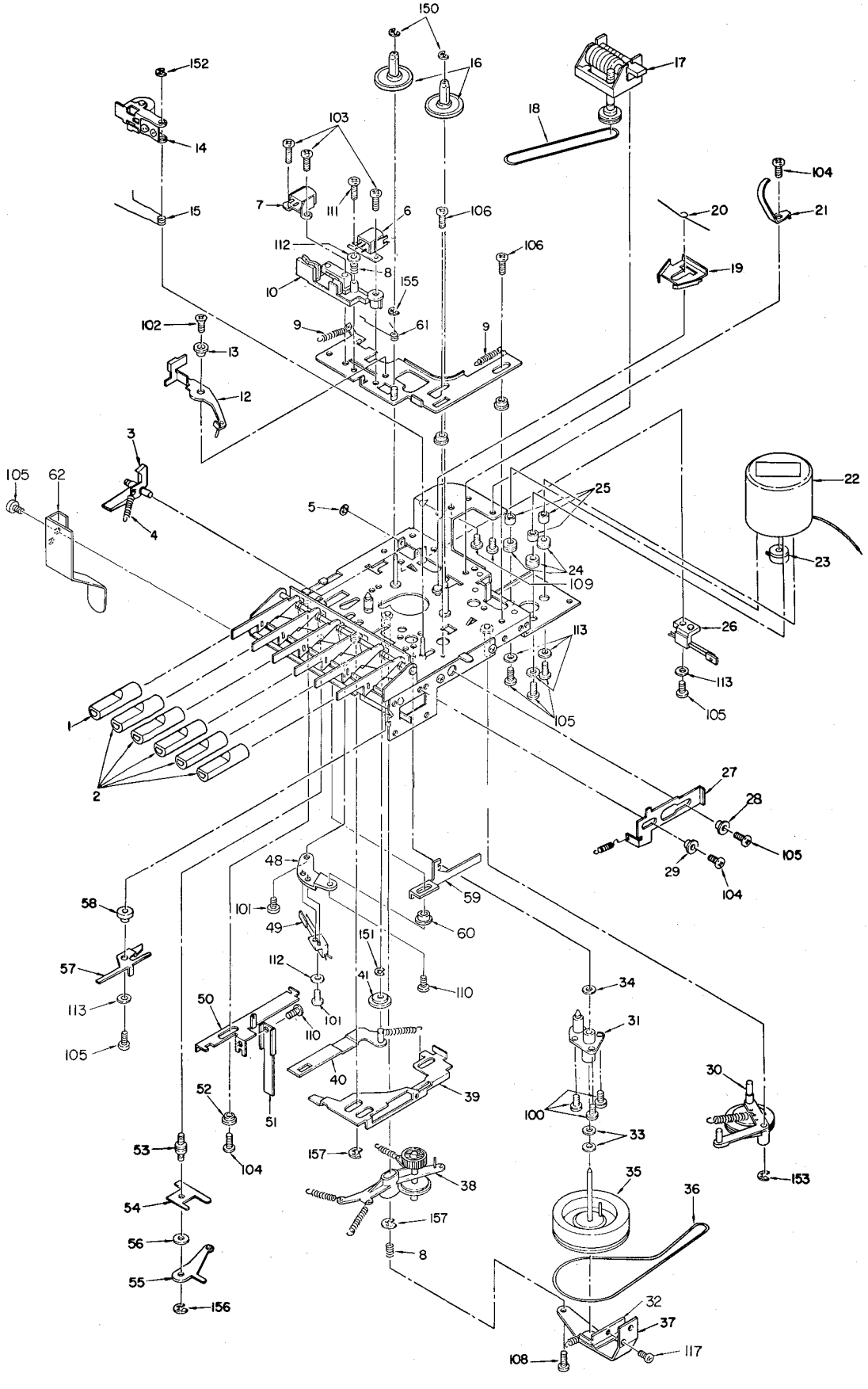
3) DC voltages are to be measured with DC VTVM under no signal condition in "FM" Position.

4) DC voltages of cassette part are to be measured with DC VTVM in "REC" and "PLAY" position.

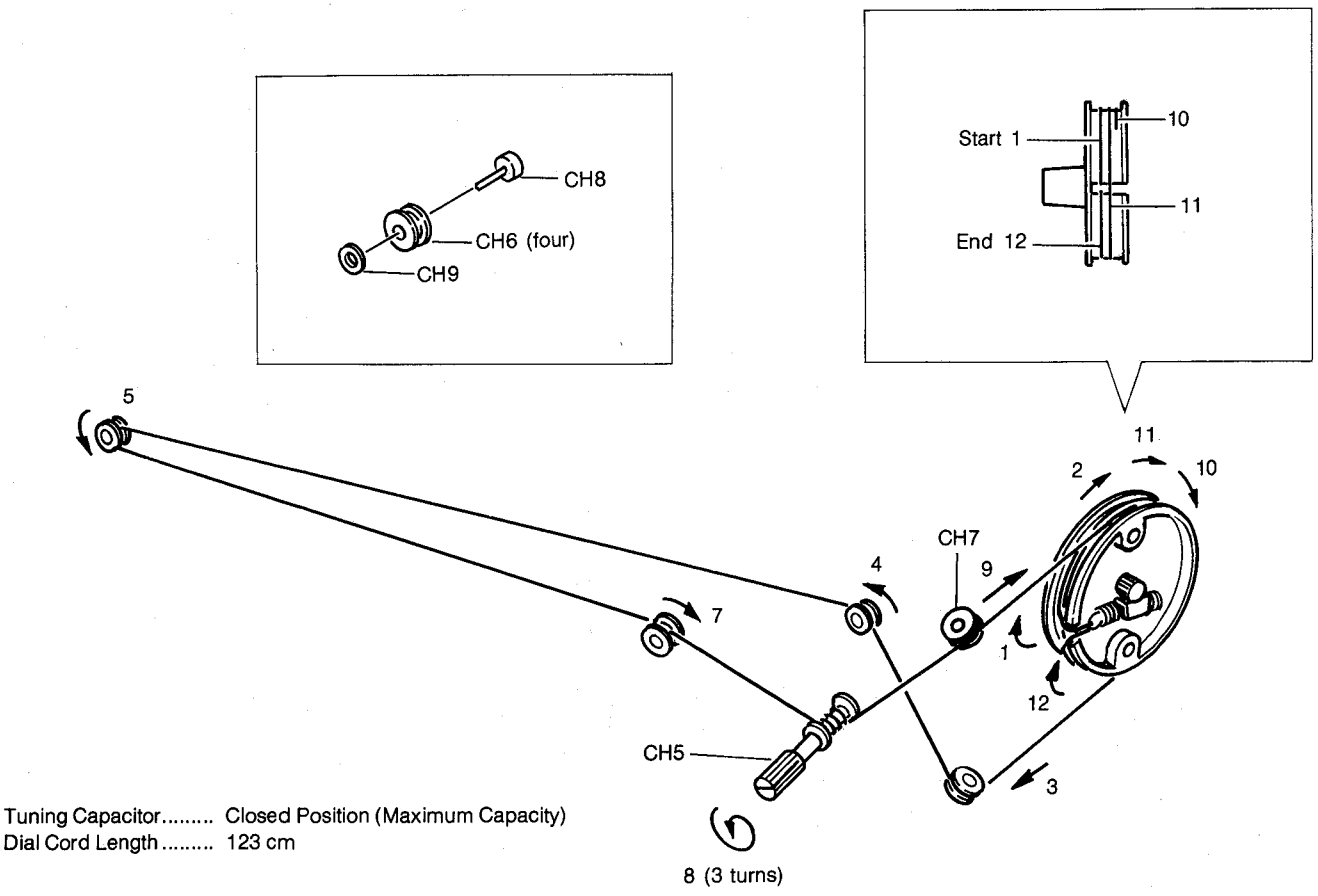
PIN (V)	IC201 AM(V)	IC201 FM(V)	IC301 MONO (V)	IC301 STEREO (V)	IC701,702 (V)
1	0.8	0.8	2.2	2.1	0.0
2	0.0	0.0	6.7	6.7	13.0
3	2.4	2.4	6.7	6.7	12.3
4	5.4	5.3	6.7	6.7	1.3
5	1.1	1.1	2.2	2.2	13.9
6	0.0	0.0	2.2	2.2	0.0
7	1.1	1.2	4.4	4.4	0.01
8	6.7	6.6	4.4	4.4	-13.9
9	6.4	6.4	1.5	1.4	0.0
10	1.4	1.4	13.7	0.9	-13.9
11	0.8	0.8	0.0	0.0	-0.04
12	6.4	6.4	1.0	1.2	-0.04
13	0.7	0.7	0.0	0.9	0.0
14	1.5	1.5	0.0	0.0	
15	6.4	6.4	0.8	0.8	
16	0.7	0.7	4.8	4.9	

* This diagram might be modified without notice for further development of technology.

EXPLODED VIEW OF CASSETTE TAPE DECK



DIAL CORD STRINGING GUIDE



Tuning Capacitor..... Closed Position (Maximum Capacity)
Dial Cord Length..... 123 cm

FIG. 6

ALIGNMENT INSTRUCTIONS (RADIO)–1

AM IFT	
T201 (AM 1st IFT)	455 kHz (UK: 470 kHz)
T205 (AM 3rd IFT).....	455 kHz (UK: 470 kHz)
LW	
L204 (OSC Coil).....	145 kHz
L202 (ANT Coil).....	145 kHz
CT204 (OSC Trimmer)	285 kHz
CT202 (ANT Trimmer).....	285 kHz
MW	
L203 (OSC Coil).....	550 kHz (UK: 570 kHz)
L201 (ANT Coil)	550 kHz (UK: 570 kHz)
CT203 (OSC Trimmer)	1500 kHz
CT201 (ANT Trimmer).....	1500 kHz
FM IFT	
T101 (FM 1st IFT).....	10.7 MHz
T203,T204 (FM Disc.IFT)..	10.7 MHz
FM-RF	
L102 (OSC Coil).....	90 MHz
L101 (DET Coil)	90 MHz
CT102 (OSC Trimmer)	106 MHz
CT101 (DET Trimmer).....	106 MHz
FM STEREO	
VR301 (Separation Control)	

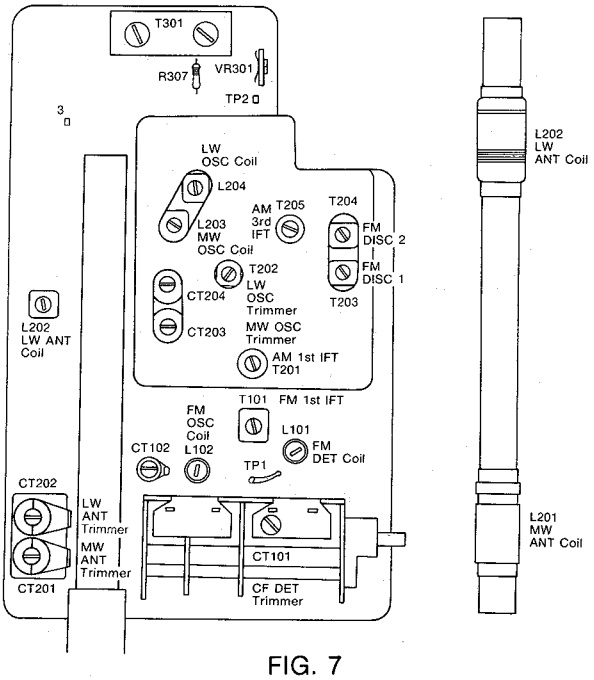


FIG. 7

ORDER NO. TSD-7802-S1N

Service Manual

Compact Stereo

SG-1020L
SG-1020S

FM/AM/FM STEREO RADIO AND RECORD PLAYER WITH CASSETTE DECK

Supplement-2

Subject:
Modification of Cassette Deck Circuit.

* This service manual includes only modifications for the original service manual of model SG-1020L, SG-1020S (ORDER NO. TSD-7506-241, 7509-244).
* This supplement-2 issue should be filed with the original service manual SG-1020L, SG-1030L.
* When servicing model SG-1020L, SG-1020S this supplement and the original one should be referred.

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description				Per Set (pcs.)	Remarks
		RESISTORS					
R401,402	ERD25TJ152	Carbon	1.5kΩ	1/4W	±5%	2	
R403,404	ERD25TJ334	Carbon	330kΩ	1/4W	±5%	2	
R405,406	ERD25TJ332	Carbon	3.3kΩ	1/4W	±5%	2	
R407,408	ERD25TJ684	Carbon	680kΩ	1/4W	±5%	2	
R409,410	ERD25TJ470	Carbon	47Ω	1/4W	±5%	2	
R411,412	ERD25TJ473	Carbon	47kΩ	1/4W	±5%	2	
R413,414	ERD25TJ274	Carbon	270kΩ	1/4W	±5%	2	
R415,416	ERD25TJ152	Carbon	1.5kΩ	1/4W	±5%	2	
R417,418	ERD25TJ682	Carbon	6.8kΩ	1/4W	±5%	2	
R419,420	ERD25TJ153	Carbon	15kΩ	1/4W	±5%	2	
R421,422	ERD25TJ473	Carbon	47kΩ	1/4W	±5%	2	
R423,424	ERD25TJ222	Carbon	2.2kΩ	1/4W	±5%	2	
R425,426	ERD25TJ333	Carbon	33kΩ	1/4W	±5%	2	
R427,428	ERD25TJ102	Carbon	1kΩ	1/4W	±5%	2	
R429,430	ERD25TJ183	Carbon	18kΩ	1/4W	±5%	2	
R431,432	ERD25TJ102	Carbon	1kΩ	1/4W	±5%	2	
R801,802	ERD25TJ100	Carbon	10Ω	1/4W	±5%	2	
R803,804	ERD25TJ154	Carbon	150kΩ	1/4W	±5%	2	
R807	ERD25TJ684	Carbon	680kΩ	1/4W	±5%	1	
R809	ERD25TJ472	Carbon	4.7kΩ	1/4W	±5%	1	
R811	ERD25TJ103	Carbon	10kΩ	1/4W	±5%	1	
R813	ERD25TJ220	Carbon	22Ω	1/4W	±5%	1	
R814	ERD25TJ222	Carbon	2.2kΩ	1/4W	±5%	1	
R815	ERD25TJ221	Carbon	220Ω	1/4W	±5%	1	
R816	ERD25TJ102	Carbon	1kΩ	1/4W	±5%	1	
R818	ERD25TJ683	Carbon	68kΩ	1/4W	±5%	1	
R819	ERD25TJ221	Carbon	220Ω	1/4W	±5%	1	
R821	ERG1ANJ330	M. Film	33Ω	1W	±5%	1	

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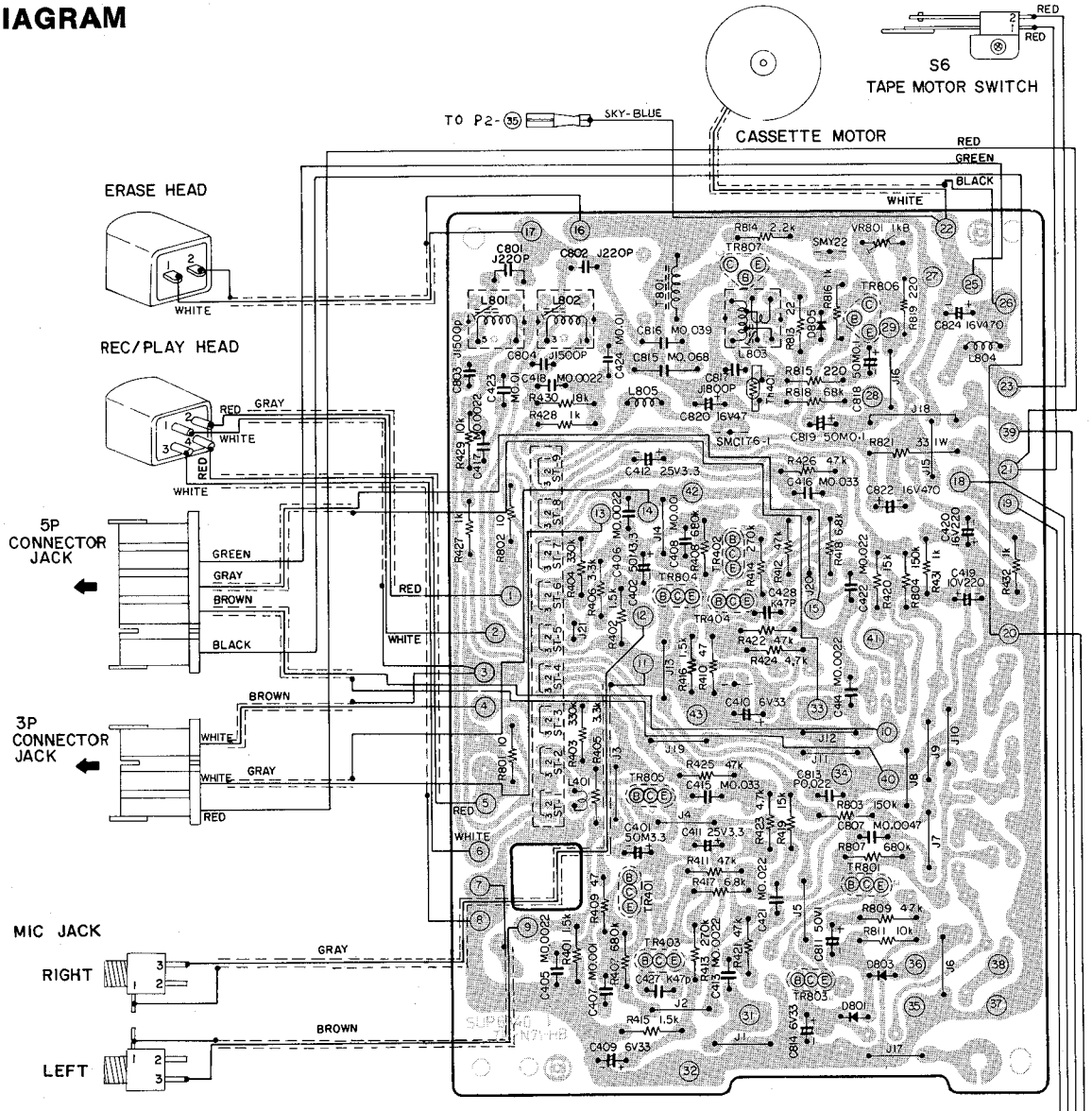
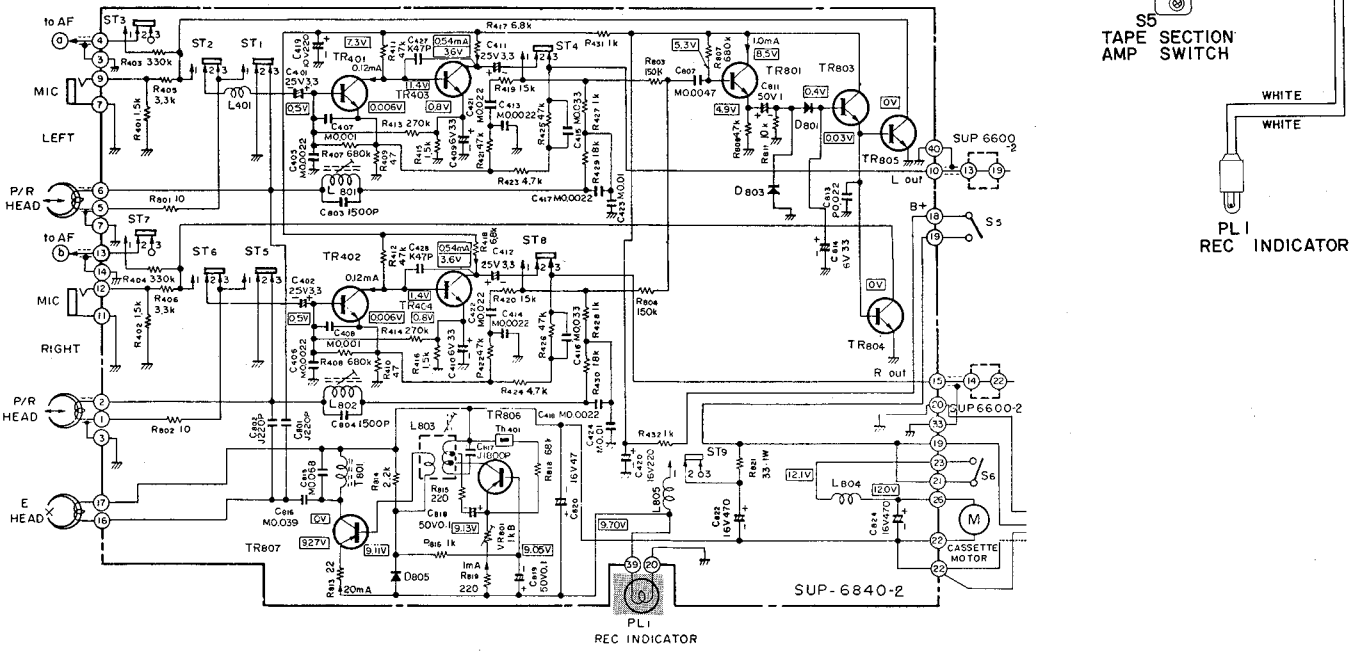
Ref. No.	Part No.	Description				Per Set (pcs.)	Remarks
CAPACITORS							
C401,402	ECEA50M3R3	Electrolytic	3.3μF	50WV		2	
C405,406	ECKD1H102MD	Ceramic	0.001μF	50WV	±20%	2	
C407,408	ECKD1H102MD	Ceramic	0.001μF	50WV	±20%	2	
C409,410	ECEA16V33	Electrolytic	33μF	16WV		2	
C411,412	ECEA50V3R3	Electrolytic	3.3μF	50WV		2	
C413,414	ECKD1H222MD	Ceramic	0.0022μF	50WV	±20%	2	
C415,416	ECQM1H473KZ	Polyester	0.047μF	50WV	±10%	2	
C417,418	ECKD1H222MD	Ceramic	0.0022μF	50WV	±20%	2	
C419,420	ECEA16V220	Electrolytic	220μF	16WV		2	
C421,422	ECKD1H223MD	Ceramic	0.022μF	50WV	±20%	2	
C423,424	ECKD1H103MD	Ceramic	0.01μF	50WV	±20%	2	
C427,428	ECCD1H470K	Ceramic	47pF	50WV	±10%	2	
C801,802	ECQS1221JZ	Styrol	220pF	125WV	±5%	2	
C803,804	ECQS1152JZ	Styrol	1500pF	125WV	±5%	2	
C807	ECKD1H472MD	Ceramic	0.0047μF	50WV	±20%	1	
C811	ECEA50V1	Electrolytic	1μF	50WV		1	
C813	ECKD1H223PF	Ceramic	0.022μF	50WV	+100,−0%	1	
C814	ECEA16V33	Electrolytic	33μF	16WV		1	
C815	ECQM1H683MZ	Polyester	0.068μF	50WV	±20%	1	
C816	ECQM1H393MZ	Polyester	0.039μF	50WV	±20%	1	
C817	ECQS1182JZ	Styrol	1800pF	125WV	±5%	1	
C818,819	ECEA50MR1	Electrolytic	0.1μF	50WV		2	
C820	ECEA16V47	Electrolytic	47μF	16WV		1	
C824	ECEA16V470	Electrolytic	470μF	16WV		1	
COILS AND TRANSFORMERS							
L801,802	RLQC542-T	Trap Coil				2	
L803	SLO9Z10-K	OSC Coil				1	
L804,805	ELQ250A999	RFC				2	
T801	SLT6E2-D	Choke Coil				1	
TRANSISTORS							
TR401,402	2SC1327	EQ Amp				2	
TR403,404	2SC1327	EQ Amp				2	
TR801	2SC828	AGC Amp				1	
TR803	2SC828	AGC Amp				1	
TR804,805	2SC828	AGC				2	
TR806	2SB175	AC Bias OSC				1	
TR807	2SB324	AC Bias Power Amp				1	
DIODES							
D801	VD1121	AGC Rect				1	
D803	2OA90	AGC Rect				1	
D805	VD1121	AOC				1	
SWITCH							
ST1∼9	SSH36	Rec/Play Switch				1	
VARIABLE RESISTOR							
VR801	EVLT0AA00B13	Preset 1kΩ B				1	
THERMISTOR							
TH	RRT103	Thermistor				1	

■ WIRING DIAGRAM



■ SCHEMATIC DIAGRAM



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ALIGNMENT INSTRUCTIONS (RADIO)–2

FREQUENCY AND DISTANCE ON DIAL SCALE

To accurately align to the proper frequencies on the dial scale, refer to Table below and mark the edge of the dial scale accordingly, using the "Start Point" mark on the dial scale as a reference point.

Control Setting and Procedure:

1. Volume Control ..... Maximum (AM-IF and RF, FM-RF)
   Minimum (FM-IF)
2. Bass and Treble Control ..... Center
3. Balance Control ..... Center
4. Band Selector ..... LW, MW, FM AUTO
5. Power Switch ..... ON
6. Tape Monitor ..... SOURCE
7. Output of signal generator should be no higher than necessary to obtain output reading.
8. Make certain that speaker system is connected to the tuner when aligning.

BAND	FREQUENCY	DISTANCE FROM "START POINT"
LW	145 kHz 285 kHz	13.3 mm 160.5 mm
MW	550 kHz 1500 kHz	18.4 mm 157.5 mm
FM	90 MHz 106 MHz	23.6 mm 147.5 mm

STEP	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUST	REMARKS
	CONNECTION	FREQUENCY				
AM-IF and ALIGNMENT Adjust for maximum						
1	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz 30% Mod. with 400 Hz	Point of non-interference. (on/about 600 kHz)	Output meter across speaker jack (L). (Imp. 8 Ω)	T201 (AM 1st IFT) T205 (AM 3rd IFT)	Adjust for maximum output.
2 (LW)	Fashion loop of several turns of wire and radiate signal into loop of receiver.	145 kHz 30% Mod. with 400 Hz	145 kHz (13.3 mm)	Output meter across speaker Jack (L). (Imp. 8 Ω)	L204 (LW OSC Coil) L202 (LW ANT Coil)	Adjust for maximum output by sliding coil L202 along ferrite core.
3 (LW)	Fashion loop of several turns of wire and radiate signal into loop of receiver.	285 kHz 30% Mod. with 400 Hz	285 kHz (160.5 mm)	Output meter across speaker jack (L). (Imp. 8 Ω)	CT204 (LW OSC Trimmer) CT202 (LW ANT Trimmer)	Adjust for maximum output. Repeat Steps (2) and (3).
4 (MW)	Fashion loop of several turns fo wire and radiate signal into loop of receiver.	550 kHz 30% Mod. with 400 Hz	550 kHz (18.4 mm)	Output meter across speaker jack (L). (Imp. 8 Ω)	L203 (MW OSC Coil) L201 (MW ANT Coil)	Adjust for maximum output by sliding coil L201 along ferrite core.
5 (MW)	Fashion loop of several turns of wire and radiate signal into loop of receiver.	1500 kHz 30% Mod. with 400 Hz	1500 kHz (157.5 mm)	Output meter across speaker jack (L). (Imp. 8 Ω)	CT203 (MW OSC Trimmer) CT201 (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).
Note: T202 is pre-aligned. Do not touch it.						
FM-IF and DETECTOR ALIGNMENT						
1	High side through 0.001 mfd to point TP1. Common to chassis.	10.7 MHz (400 kHz SWP.)	Point of non-interference (on/ about 98 MHz)	Connect vert amp. of scope to point TP2. Common to chassis.	T101 (FM 1st IFT) T203 (FM Disc. IFT)	Adjust for maximum amplitude and symmertrical curve (Refer to Fig. 8)
2	High side through 0.001 mfd to point TP1. Common to chassis.	10.7 MHz (400 kHz SWP.)	Point of non-intereference (on/ about 98 MHz)	Connect vert. amp. of scope to point TP2. Common to chassis.	T204 (FM Disc. IFT)	Adjust for maximum amplitude and proper linearity between ±100 kHz markers. (Refer to Fig. 9)
Note: Before aligning step 1, turn the core of T204 fully counterclockwise.						

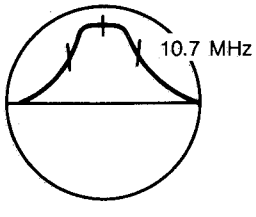


FIG. 8

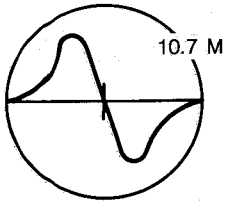
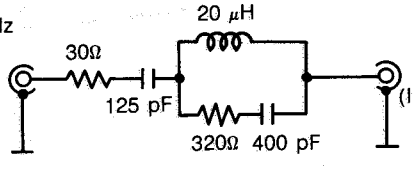


FIG. 9



(For NEMKO only)

FIG. 10

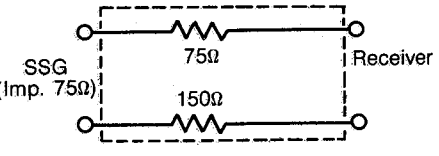


FIG. 11 DUMMY ANTENNA

ALIGNMENT INSTRUCTIONS (RADIO)—3

STEP	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUST	REMARKS
	CONNECTION	FREQUENCY				
	FM-RF ALIGNMENT					
1	Connect to EXT. FM antenna terminal through Dummy antenna. Common to chassis. (Refer to Fig. 11)	90 MHz 30% Mod. with 400 Hz	90 MHz (23.6 mm)	Output meter across speaker jack (L). (Imp. 8 Ω)	L102 (FM OSC Coil) L101 (FM DET Coil)	Adjust for maximum output.
2	Connect to EXT. FM antenna terminal through Dummy antenna. Common to chassis. (Refer to Fig. 11)	106 MHz 30% Mod. with 400 Hz	106 MHz (147.5 mm)	Output meter across speaker jack (L). (Imp. 8 Ω)	CT102 (FM OSC Trimmer) CT101 (FM DET Trimmer)	Adjust for maximum output. Repeat steps (1) and (2).

Notes: 1. As three output readings will be present, adjustments must be made at center frequency.
2. To correct drift at the FM dial scale (87.5 or 108 MHz), adjust coil L102 and trimmer CT102 with each other.

Control Setting and Procedure:

1. Signal Generator — Modulation Rate of 19 kHz Pilot Signal 10%
   Modulation Rate of right and Left Signal 27%
   Output Level ..... 60 dB
2. Tuner (Balance Control): Adjust balance control Level so that output level from both channels becomes equal.
3. Volume Control ..... MIN

SEPARATION ALIGNMENT

EQUIPMENT CONNECTION			ADJUST	REMARKS
SIGNAL GENERATOR	VTVM	OSCILLOSCOPE		
Connect to EXT. FM antenna terminal through dummy antenna. (Refer to Fig. 11)	Connect across speaker jack (left side) (Imp. 8 Ω)	Connect vertical amp. input of scope to terminals of VTVM.	VR301 (Separation Control)	Adjust VR301 for minimum indication on VTVM from the left side output when the right side of stereo modulator is modulated. Adjust VR301 in the same way for the right side. Adjust for best balance between "L to R" and "R to L" separation.

Note: T301 is pre-aligned. Do not touch it.

ALIGNMENT INSTRUCTIONS (TAPE DECK)

Control Setting and Procedure:

1. Function selector ..... TAPE/MIC
2. Balance Control ..... Center
3. Depress push buttons PLAY and REC at the same time. (Be sure to release the record safety lever manually.)
4. Tape Monitor ..... SOURCE

STEP	CIRCUITS	VTVM CONNECTION	VOLUME CONTROL	ADJUSTMENT	REMARKS
1	AC BIAS OSCILLATOR and ERASE	Connect positive side to Pin 17 (+) and negative side to Pin 16 (−). Refer to Fig. 12.	MIN	VR801 (Voltage Control)	Adjust VR801 for 4.5±0.2V reading on VTVM-1.
2	AC BIAS OSCILLATOR and ERASE	Connect positive side to Pin 5 and negative side to Pin 3 (Refer to Fig. 12)	MIN	L801 (AC Bias Trap Coil)	Adjust L403 for 3.3±0.2 mV reading on VTVM-1.
3	AC BIAS OSCILLATOR and ERASE	Connect positive side to Pin 1 and negative side to Pin 3 (Refer to Fig. 12)	MIN	L802 (AC Bias Trap Coil)	Adjust L404 for 3.3±0.2 mV reading on VTVM-2. Repeat steps (2) and (3).

Notes: 1. Do not touch R/P Head and Erase Head when adjusting.
2. As two points are obtainable when adjusting the L801 and L802, turn cores down clockwise before making adjustments.

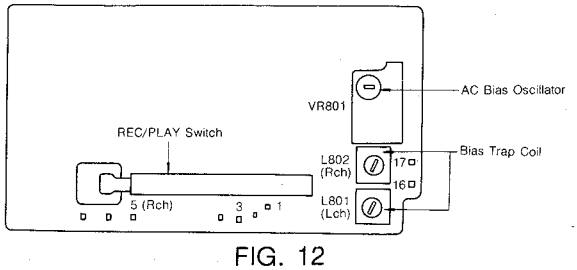


FIG. 12

RECORD/PLAYBACK HEAD AZIMUTH ADJUSTMENT

Playback a Standard Alignment Tape and turn Azimuth Adjusting Screw for maximum loudness.

* **Test Tape (6.3 kHz):** VTT-652 or Equivalent

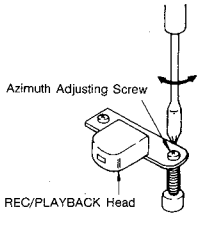
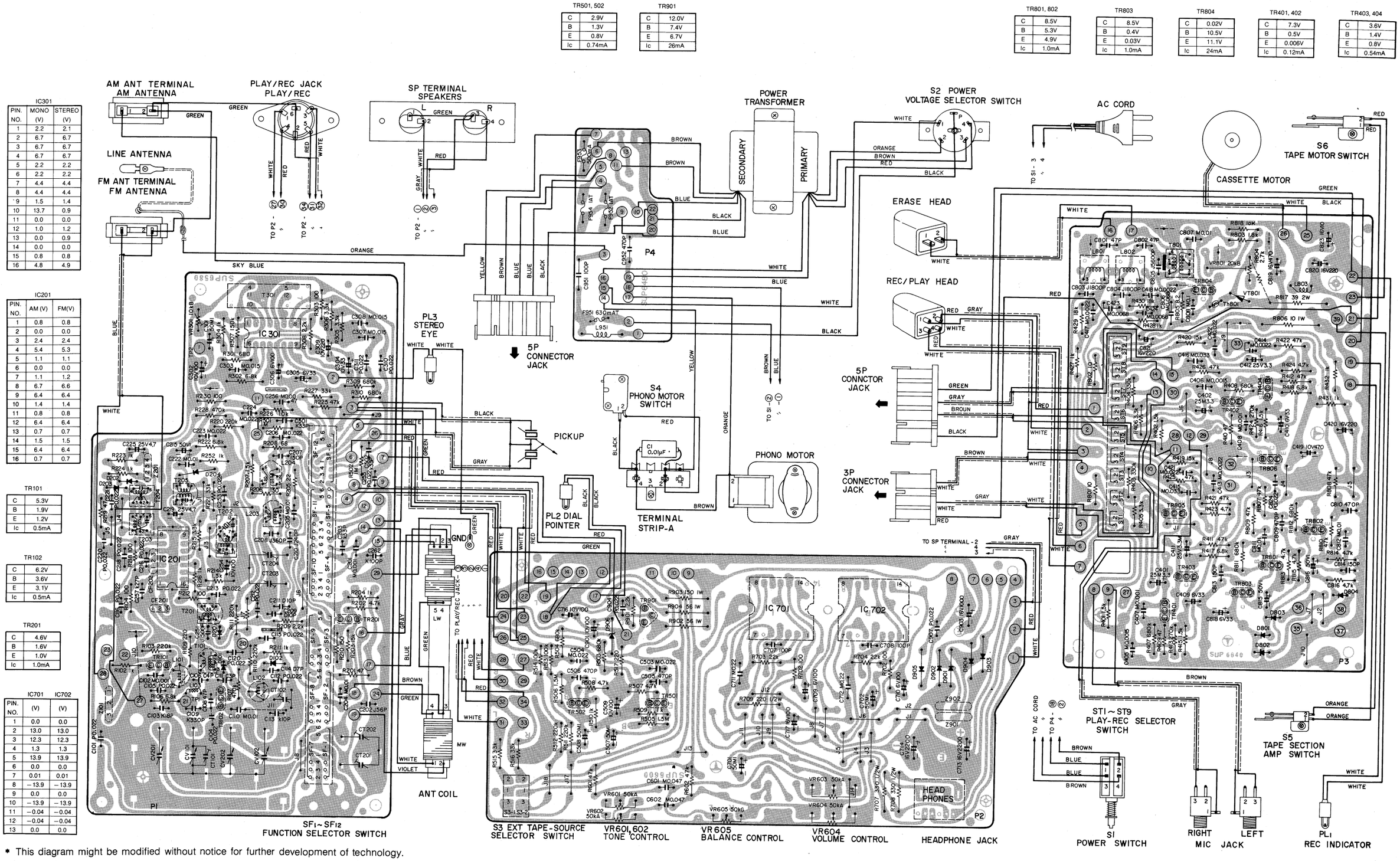


FIG. 13

WIRING DIAGRAM OF MODEL SG-1020L



* This diagram might be modified without notice for further development of technology.

MECHANICAL ADJUSTMENT OF TAPE DECK

PRESSURE ROLLER ADJUSTMENT

1. Switch set to PLAY. (Do not insert cassette.)
2. Hook spring gauge to arm of pressure rollers, as shown in Fig. 14.
3. Pull pressure roller away from the capstan in the direction of arrow 1 with spring gauge and slowly permit the pressure roller to return toward capstan in the direction of arrow 2.
4. Measure tension at time when pressure roller makes contact with capstan (or when pressure roller starts rotating).
5. The standard tension of pressure roller should be 250 ~ 380 g.
6. If pressure is not within these limits;
   Clean the rubber roller and capstan with a soft cloth moistened with alcohol or replace pressure spring.

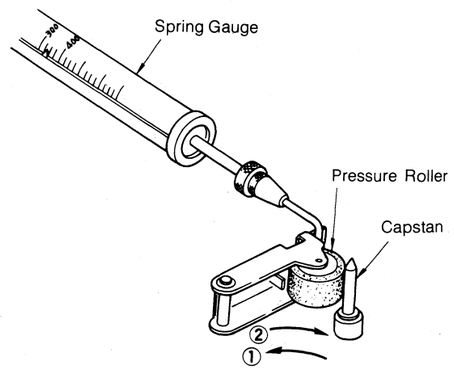


FIG. 14

TAKE-UP TORQUE ADJUSTMENT

* Test Tape: SRK-CT (Take-up Torque Meter)

1. Insert test tape.
2. Rewind the tape to its starting point.
3. Switch set to PLAY.
4. Read "▶" mark of indicator on take-up side, as shown in Fig. 15.
5. Repeat PLAY-STOP several times and read the average tension.
6. The standard take-up tension should be 30 ~ 70 g.cm.

If take-up tension is not within these limits;

a) Clean main belt, take-up reel and all parts which contact them with a cotton swab moistened with alcohol, and/or
b) Switch set to "OFF", remove main belt and make sure that take-up reel and take-up clutch are rotating smoothly.
c) Change take-up clutch tension by turning the friction spring under reel table, as shown in Fig. 16 and/or
d) Replace take-up clutch.

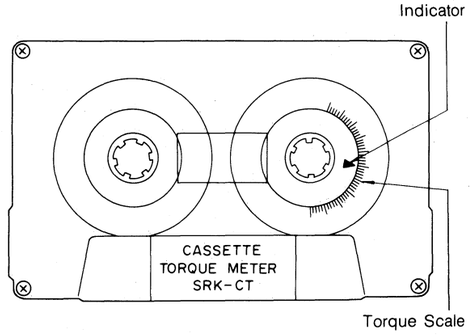


FIG. 15

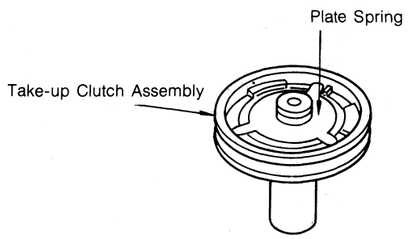


FIG. 16

REPLACEMENT PARTS LIST

NOTES: 1. Part numbers are indicated on most mechanical parts.
Please use this part number for parts orders.
2. SAFETY indicates that only parts specified by the manufacturer be used for replacement in critical circuits.
3. X ~ Z rank.
X rank parts will cover 80% of repair needs.
X + Y rank parts will cover 95% of repair needs.
Z rank parts are less necessary.

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks
TRANSISTORS				
TR101, 102	2SC1675	FM RF Amp. and FM Converter	2	X
TR201	2SC1359	AM Converter	1	X
TR901	2SC1383	Ripple Filter	1	X
TR401-404, 501, 502	2SC1327	Cassette Equalizer Amplifier, AF Amplifier	6	X
TR801, 802, 803, 805, 806	2SC828	Cassette AGC Amp. and AGC	5	X
TR804	2SA683	Cassette Bias Oscillator	1	X
INTEGRATED CIRCUITS				
IC201	AN217	AM RF and FM IF Amplifier	1	X
IC301	AN271	FM MPX Amplifier	1	X
IC701,702	UPC578C	Power Output	2	X
DIODES				
D102	SC15	FM AFC	1	X
D202,203	2-OA90	FM DET	2	X
D101,201, 204,803, 804	OA90	AM DET, FM AGC, AGC Rectifier	5	X
D801,802	VD1121	Rectifier	2	X
D901,902, 903,904, 905	10D1	Rectifier, Damper	5	X
D906	RD7R5EB	Stabilizer	1	X
VT801	EYV320D1R2J2	AOC	1	X
THERMISTOR				
TH801	RRT103	Temperature Compensator	1	X
LAMPS AND FUSES				
PL1,3	XAMR34X500	Lamp, REC and STEREO SAFETY	2	X
PL2	XAMR27T400A	Dial Pointer SAFETY	1	X
F952,954	XBAS2A1004	Fuse (1A) SAFETY	2	X
F953	XBAS2A0501	Fuse (500mA) SAFETY	1	X
F951	XBA2C06TR0	Fuse (630mA) SAFETY	1	X
COILS AND TRANSFORMERS				
L101	SLD4N12-O	FM Collector Coil	1	X
L102	RLO4N47	FM Oscillator Coil	1	X
L103	ELQ5A9R	FM IF Trap Coil	1	Y
L201,202	SLF6G24	MW, LW Ferrite Antenna	1	X
L203	SLO2M2-M	MW Oscillator Coil	1	X
L204	SLO1M2	LW Oscillator Coil	1	X
L801,802	RLQC542-T	Trap Coil	2	X
L803	ELQ250A999	RFC	1	Y
L951	SLQY35S-4X	RFC	1	Y
T101	RLI4M101	FM 1st IFT	1	X
T201	SLI2M102	AM 1st IFT	1	X
T202	RLI7W105R-T	AM CFT (except UK)	1	X
	RLI7W108P-T	AM CFT (UK only)	1	X
T203	RLI4M501-M	FM Disc. IFT (Primary)	1	X
T204	RLI4M502-M	FM Disc. IFT (Secondary)	1	X
T205	RLI2M402	AM IFT	1	X
T301	RLM1Z3Q-K	FM MPX Coil	1	X
CF201, 202	RVFCF10M12CR	FM CFT	2	X
T801	SLO9Z12-K	Bias Oscillator Coil	1	X
T1	SLT5W52-W	Power Transformer SAFETY	1	○X
COMPONENT COMBINATION				
Z101	RXABPF10801H	FM BPF	1	Y
Z201	EXA5DL04C	FM	1	Y
Z901,902	EXNF2SL04C	0.01mf (two)	2	Y
RESISTORS (RF Circuit)				
R205	ERD18TJ220	22Ω 1/8W ±5% Carbon	1	Z

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks
R201,219	ERD18TJ470	47Ω 1/8W ±5% Carbon	2	Z
R208	ERD18TJ680	68Ω 1/8W ±5% Carbon	1	Z
R104,303, 212,218, 230	ERD18TJ101	100Ω 1/8W ±5% Carbon	5	Z
R206,210	ERD18TJ151	150Ω 1/8W ±5% Carbon	2	Z
R109	ERD18TJ221	220Ω 1/8W ±5% Carbon	1	Z
R301	ERD18TJ681	680Ω 1/8W ±5% Carbon	1	Z
R211,204, 252,216, 304,223, 102,224	ERD18TJ102	1kΩ 1/8W ±5% Carbon	8	Z
R207,214	ERD18TJ152	1.5kΩ 1/8W ±5% Carbon	2	Z
R308,209	ERD18TJ222	2.2kΩ 1/8W ±5% Carbon	2	Z
R215,306, 305	ERD18TJ332	3.3kΩ 1/8W ±5% Carbon	3	Z
R202	ERD18TJ472	4.7kΩ 1/8W ±5% Carbon	1	Z
R106,222, 302	ERD18TJ682	6.8kΩ 1/8W ±5% Carbon	3	Z
R226	ERD18TJ103	10kΩ 1/8W ±5% Carbon	1	Z
R203	ERD18TJ153	15kΩ 1/8W ±5% Carbon	1	Z
R221,227	ERD18TJ333	33kΩ 1/8W ±5% Carbon	2	Z
R225	ERD18TJ473	47kΩ 1/8W ±5% Carbon	1	Z
R307	ERD18TJ154	150kΩ 1/8W ±5% Carbon	1	Z
R103,110, 111,220	ERD18TJ224	220kΩ 1/8W ±5% Carbon	4	Z
R228,107	ERD18TJ474	470kΩ 1/8W ±5% Carbon	2	Z
R309,310	ERD18TJ684	680kΩ 1/8W ±5% Carbon	2	Z
R501,502	ERC14GK105	1MΩ 1/4W ±10% Solid	2	Z
(AF Circuit)				
R701,702	ERD18TJ101	100Ω 1/8W ±5% Carbon	2	Z
R517	ERD18TJ221	220Ω 1/8W ±5% Carbon	1	Z
R509,510	ERD18TJ102	1kΩ 1/8W ±5% Carbon	2	Z
R901	ERD18TJ222	2.2kΩ 1/8W ±5% Carbon	1	Z
R507,508	ERD18TJ472	4.7kΩ 1/8W ±5% Carbon	2	Z
R703,704	ERD18TJ223	22kΩ 1/8W ±5% Carbon	2	Z
R515,516	ERD18TJ333	33kΩ 1/8W ±5% Carbon	2	Z
R601,602	ERD18TJ473	47kΩ 1/8W ±5% Carbon	2	Z
R513,514	ERD18TJ104	100kΩ 1/8W ±5% Carbon	2	Z
R511,512	ERD18TJ224	220kΩ 1/8W ±5% Carbon	2	Z
R503,504	ERD18TJ684	680kΩ 1/8W ±5% Carbon	2	Z
R505,506	ERC14GK155	1.5MΩ 1/4W ±10% Solid	2	Z
R707,708	ERC12GK331	330Ω 1/2W ±10% Solid	2	Z
R709	ERD12SJ221	220Ω 1/2W ±5% Carbon	1	Z
R902,904	ERG1ANJ560	56Ω 1W ±5% Metal Film SAFETY	2	Z
R903	ERG1ANJ151	150Ω 1W ±5% Metal Film SAFETY	2	Z
(Cassette Circuit)				
R805	ERD18TJ8R2	8.2Ω 1/8W ±5% Carbon	1	Z
R801,802	ERD18TJ100	10Ω 1/8W ±5% Carbon	2	Z
R409,410	ERD18TJ470	47Ω 1/8W ±5% Carbon	2	Z
R427,428, 431,432	ERD18TJ102	1kΩ 1/8W ±5% Carbon	4	Z
R401,402, 415,416	ERD18TJ152	1.5kΩ 1/8W ±5% Carbon	4	Z
R405,406	ERD18TJ332	3.3kΩ 1/8W ±5% Carbon	2	Z
R813,814, 815,816, 423,424	ERD18TJ472	4.7kΩ 1/8W ±5% Carbon	6	Z
R417,418	ERD18TJ682	6.8kΩ 1/8W ±5% Carbon	2	Z
R818	ERD18TJ103	10kΩ 1/8W ±5% Carbon	1	Z
R419,420	ERD18TJ153	15kΩ 1/8W ±5% Carbon	2	Z
R411,412, 421,422, 425,426, 807,808, 809,810	ERD18TJ473	47kΩ 1/8W ±5% Carbon	10	Z
R403,404	ERD18TJ334	330kΩ 1/8W ±5% Carbon	2	Z
R407,408, 811,812	ERD18TJ684	680kΩ 1/8W ±5% Carbon	4	Z
R803	ERD18TJ182	1,8kΩ 1/8W ±5% Carbon	1	Z
R429,430	ERD18TJ183	18kΩ 1/8W ±5% Carbon	2	Z
R413,414	ERD18TJ274	270kΩ 1/8W ±5% Carbon	2	Z
R804	ERD18TJ272	2.7kΩ 1/8W ±5% Carbon	1	Z
R806	ERX2ANJ100	10Ω 2W ±5% Metal Film SAFETY	1	Z
R817	ERX2ANJ390	39Ω 2W ±5% Metal Film SAFETY	1	Z

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks
		CAPACITORS (RF Circuit)		
C108	ECCD1H470K	47pf 50WV ±10% Ceramic	1	Z
C111	ECCD1H030C	3pf 50WV ±0.25pf Ceramic	1	Z
C106	ECCD1H040C	4pf 50WV ±0.25pf Ceramic	1	Z
C114	ECCD1H070D	7pf 50WV ±0.5pf Ceramic	1	Z
C209, 211	ECCD1H100D	10pf 50WV ±0.5pf Ceramic	2	Z
C113	ECCD1H100KV	10pf 50WV ±10% Ceramic	1	Z
C103	ECCD1H180K	18pf 50WV ±10% Ceramic	1	Z
C257	ECCD1H270K	27pf 50WV ±10% Ceramic	1	Z
C203, 501, 502	ECCD1H330K	33pf 50WV ±10% Ceramic	3	Z
C202	ECCD1H560J	56pf 50WV ±5% Ceramic	1	Z
C109	ECCD1H331K	330pf 50WV ±10% Ceramic	1	Z
C207	ECCD1H151K	150pf 50WV ±10% Ceramic	1	Z
C262	ECCD1H101K	100pf 50WV ±10% Ceramic	1	Z
C210	ECQS1241JZ	240pf 100WV ±5% Styrol	1	Z
C208	ECQS1361JZ	360pf 100WV ±5% Styrol	1	Z
C251	ECQS1152JZ	1500pf 100WV ±5% Styrol	1	Z
C256	ECKD1H472MD	0.0047mf 50WV ±20% Ceramic	1	Z
C102, 201	ECKD1H102MD	0.001mf 50WV ±20% Ceramic	2	Z
C204, 205, 222, 110	ECKD1H103MD	0.01mf 50WV ±20% Ceramic	4	Z
C303, 307, 308	ECKD1H153MD	0.015mf 50WV ±20% Ceramic	3	Z
C206, 223, 224	ECKD1H223MD	0.022mf 50WV ±20% Ceramic	3	Z
C105, 112, 115, 212, 213, 120, 255, 218, 220, 221, 310, 311, 253, 101, 116, 216	ECKD1H223P	0.022mf 50WV +100, −0% Ceramic	16	Z
C301	ECEA50M1	1mf 50WV Electrolytic	1	Y
C215	ECEA50V1	1mf 50WV Electrolytic	1	Y
C219, 225	ECEA25V4R7	4.7mf 25WV Electrolytic	2	Y
C304	ECEA10V33	33mf 10WV Electrolytic	1	Y
C306	ECEA6V100	100mf 6WV Electrolytic	1	Y
C254,302	ECEA10V100	100mf 10WV Electrolytic	2	Y
C309	ECEA10V220	220mf 10WV Electrolytic	1	Y
C305	ECEA6V33	33mf 6WV Electrolytic	1	Y
C104	ECKD1H223ZFZ	0.022mf 50WV +80, −20% Ceramic	1	Z
		(AF Circuit)		
C707, 708	ECCD1H101K	100pf 50WV ±10% Ceramic	2	Z
C505, 506	ECCD1H471K	470pf 50WV ±10% Ceramic	2	Z
C503, 504	ECCD1H223MD	0.022mf 50WV ±20% Ceramic	2	Z
C904, 907	ECCD1H223P	0.022mf 50WV +100, −20% Ceramic	2	Z
C507, 508, 701, 702	ECEA50M1	1mf 50WV Electrolytic	4	Y
C709, 710	ECEA6V100	100mf 6WV Electrolytic	2	Y
C509, 716, 901	ECEA10V100	100mf 10WV Electrolytic	3	Y
C713, 714	ECEA16V2200	2200mf 16WV Electrolytic	2	Y
C903	ECEA16V1000	1000mf 16WV Electrolytic	1	Y
C717	ECEA16V100	100mf 16WV Electrolytic	1	Y
C711,712	ECQM05224MZ	0.22mf 50WV ±20% Polyester	2	Z
C601, 602,	ECQM05473MZ	0.047mf 50WV ±20% Polyester	2	Z
		(Cassette Circuit)		
C801, 802	ECCD1H470K	47pf 50WV ±10% Ceramic	2	Z
C813, 814	ECCD1H151K	150pf 50WV ±10% Ceramic	2	Z
C809,810	ECCD1H471K	470pf 50WV ±10% Ceramic	2	Z
C824	ECCD1H223P	0.022mf 50WV +100, −0% Ceramic	1	Z
C407, 408	ECCD1H102MD	0.001mf 50WV ±20% Ceramic	2	Z
C811, 812	ECCD1H103MD	0.01mf 50WV ±20% Ceramic	2	Z
C405, 406	ECCD1H152MD	0.0015mf 50WV ±20% Ceramic	2	Z
C417, 418, 413, 414	ECCD1H222MD	0.0022mf 50WV ±20% Ceramic	4	Z
C808	ECQG05104MZ	0.1mf 50WV ±20% Polyester	1	Z
C807	ECQG05103MZ	0.01mf 50WV ±20% Polyester	1	Z
C803, 804	ECQS1182JZ	1800pf 100WV ±5% Styrol	2	Z
C805	ECQS1562JZ	5600pf 100WV ±5% Styrol	1	Z
C423, 424	ECKD1H682MD	0.0068mf 50WV ±20% Ceramic	2	Z
C421, 422	ECKD1H223MD	0.022mf 50WV ±20% Ceramic	2	Z
C415, 416	ECQM05333MD	0.033mf 50WV ±20% Polyester	2	Z
C806	ECQM05683MD	0.068mf 50WV ±20% Polyester	1	Z
C815, 816	ECEA50V1	1mf 50WV Electrolytic	2	Y
C401, 402	ECEA25M3R3	3.3mf 25WV Electrolytic	2	Y
C411, 412	ECEA25V3R3	3.3mf 25WV Electrolytic	2	Y
C409, 410, 818	ECEA6V33	33mf 6WV Electrolytic	3	Y
C820, 821, 420	ECEA16V220	220mf 16WV Electrolytic	3	Y

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks
C819	ECEA16V470	470mf 16WV Electrolytic	1	Y
C419	ECEA10V470	470mf 10WV Electrolytic	1	Y
C823	ECEA16V10	10mf 16WV Electrolytic	1	Y
		(Others)		
C1	ECQW8A103M	0.01mf 800WV ±20% Polyester SAFETY	1	Y
C951	ECKDGS101MB3	100pf 150WV ±20% Ceramic (UK only) SAFETY	1	Y
	ECKDDS101MB	100pf 150WV ±20% Ceramic (except UK) SAFETY	1	Y
C952	ECKDDS471MB	470pf 250WV ±20% Ceramic SAFETY	1	Y
		VARIABLE RESISTORS		
VR603, 604	EWFN3AK30A54	50kA, Volume Control	1	X
VR601, 602	EWK8EA331A54	50kA, Tone Control	1	X
VR605	EVH1UA363G54	50kG, Balance Control	1	X
VR801	EVLS3AA00B24	20kΩ, Bias Oscillator Adjust	1	Y
VR301	EVLT4AA00B14	10kΩ, Separation Control	1	Y
		VARIABLE CAPACITORS		
CV101,102 201,202				
CT101	SCVC146J114K	Tuning Capacitor	1	○X
CT102	ECV1ZW10X32	Trimmer Capacitor	1	X
CT201~ 204	SCV2T12S	Trimmer Capacitor	2	X
		SWITCHES		
S1	ESB-7067	Power Switch SAFETY	1	X
S2	ESE3742	Power Voltage Selector SAFETY	1	Y
S3	SSH52	Tape Monitor Switch	1	X
S4	AM9688	Motor ON-OFF Switch SAFETY	1	X
SF	SSR76K	Function Selector Switch	1	X
ST	SSH36	Rec-Play Switch	1	X
S5	–	Refer to Ref. No. 49 on page 13.	1	X
S6	–	Refer to Ref. No. 26 on page 13.	1	X
		CHASSIS		
CH1	SUV108	Cover, Power Switch	1	Z
CH2	RDD382YA	Drum, Dial	1	Z
CH3	RDS4170A	Spring, Drum	1	Y
CH4	RDZ05A	Cord, Dial	123cm	Z
CH5	SDT1302K-1	Tuning Shaft	1	○Y
CH6	RDR20	Pulley	4	Z
CH7	RDR23	Pulley	1	Z
CH8	RDY36	Pulley Shaft	5	Z
CH9	RNW150-2	Washer, Pulley	5	Z
CH10	SHG109	Rubber, Cushion, F ANT	2	Z
CH11	SHG958	Rubber Cushion, Lamp	2	Z
CH12	SMX104	Insulated Film IC	1	Z
CH13	SUS184	Spring	1	Y
CH14	SHR112	Clamp, Power Cord	3	Z
CH15	RHG3-1	Rubber Cushion, ANT	1	Z
	SUD84	Stud (UK only)	2	Z
CH16	SJA46	Power Cord SAFETY (DEMKO, FINKO, NEMKO, SEMKO, HO)	1	X
CH16	SJA68	Power Cord (SEV) SAFETY	1	X
CH16	SJA88	Power Cord (GF, GF-2) SAFETY	1	X
CH16	SJA110	Power Cord (UK) SAFETY	1	X
CH17	SJJ84	Headphone Jack	1	Y
CH18	RJF7A	Fuse Holder	8	Y
CH19	SJS9202-1	Terminal, FM	1	Z
CH20	SJS9206-1	Terminal, AM	1	Z
CH21	SJS6502	5P Jack	1	Z
CH22	SJF9204	Terminal, Speaker	1	Z
CH23	SWK142	5P Connector Assembly	1	Z
CH24	SWK140	5P Connector Assembly	1	Z
CH25	SWK144	3P Connector Assembly	1	Z
CH26	SJR302	Terminal Strip, 3P	1	Z
CH27	RJJ78	Mike Jack	2	Y
CH28	SNE420	Nut, Mike Jack	1	Y
CH29	SDP168	Dial Pointer Assembly SAFETY	1	X
CH30	XTV3+8BR	Screw, Chassis and Cassette Mounting	12	Z
CH31	XTW3+10B	Screw, Bottom Board Mounting	5	Z
CH32	XTV3+15B	Screw, Foot and Bottom Board Mounting	4	Z
		ACCESSORIES		
A1	SJM112	Mike	2	Y
A2	WN133	Mike Stand	2	Y
A3	SQX5674	Operating Instructions (UK)	1	Z
	SQX5676	Operating Instructions (HO, GF, GF-2, SEV)	1	Z
	SQX5678	Operating Instructions (SEMKO, DEMKO, FINKO, NEMKO)	1	Z
	SQX9466	Operating Instructions (NEMKO)	1	Z

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks
		PACKING		
PA1	SPG1728	Carton	1	○ Z
PA2	SPN2374	Pad, Upper	1	○ Z
PA3	SPN2376	Pad, Dust Cover	1	Z
PA4	SPN2380	Pad, Front	1	Z
PA5	SPN2382	Pad, Rear	1	Z
		CABINET		
	SYK1406	Cabinet Assembly	1	X
	SYK1408	Cabinet Assembly	1	X
CA1	SYU284	Bottom Board Assembly	1	X
CA2	SYL8	Foot	4	Y
CA3	SBC158	Button, Reset	1	Y
CA4	SYE402	Cassette Cover Assembly	1	X
CA5	SGK562	Indicator Label, Terminal	1	Y
CA6	SGE642	Dust Cover	1	X
CA7	SUV112	Cover, Cassette PCB	1	Z
CA8	SXE88	Hook Assembly	1	Y
CA9	SKD3580	Dial Panel	1	Y
CA10	SGW3500	Control Panel	1	Y
CA11	SBN570K	T Knob	1	X
CA12	SBN572K-1	V Knob	3	X
CA13	SBC180-1	Push Button, Power	1	X
CA14	SBC150-1	Push Button	1	X
CA15	SKX60	Bracket, Foot	1	○ Z
CA16	SUW932-1	Bracket, Reset Button	1	Z
CA17	SGK572	Indicator, Speed Selector	1	Y
CA18	SXE102	Eject Mechanism Assembly	1	Y
CA19	CUS180	Spring, Eject Mechanism	1	Y
CA20	SBN660	S Knob	1	Y
		SPEAKER SYSTEM (SB-102L)		
	SKA1540	Speaker Enclosure	2	○ X
	SYB170	Baffle Board Assembly	2	○ X
	SKU2160	Rear Board	2	○ X
	SGN2660	Name Plate	2	○ Z
	RGB159A	Badge, National Panasonic	2	Y
	SJP2206	Speaker Cord	2	X
	EAS16PL33SP	8Ω, 16cm Speaker	2	X
	SPN2386	Carton	1	Z
		(SB-102L (B))		
	SKA1541	Speaker Enclosure	2	○ X
	SYB170	Baffle Board Assembly	2	○ X
	SKU2160	Rear Board	2	○ X
	SGN2660	Name Plate	2	○ Z
	RGB159A	Badge, National Panasonic	2	Y
	SJP2206	Speaker Cord	2	X
	EAS16PL33SP	8Ω, 16cm Speaker	2	X
	SPN2386	Carton	1	Z
		RECORD PLAYER		
P1	SJY26	Switch Selector Lever Assembly	1	Z
P2	SJY9010	Bracket, Selector Lever	1	Z
P3	SJY9076-1	Switch Lever	1	Z
P4	SJY9048	Stopper, Lift	1	Z
P5	SNE424	Holder, Stopper	1	X
P6	SJY9070	Spring Plate, Cueing	1	Y
P7	SJY9046	Cueing Bracket	1	X
P8	SJY5004-1	Pickup Rest	1	X
P9	SJY5010	Lifter	1	X
P10	SJY14-1	Cueing Lever Assembly	1	X
P11	SPU12	Pickup	1	○ X
	SPC6	Cartridge, Ceramic	1	X
	SPJ4	Stylus, Sapphire	1	X
P14	FF-TTA901Z	Turntable	1	Y
P15	SJY3	Turntable Mat	1	Y
P16	2E-10T4PA	Phonomotor Assembly	1	X
P17	FF-GBS010	Rubber Cushion A, Motor	1	Y
P18	SHG9068	Rubber Cushion B, Motor	1	Y
P19	SNW392	Rubber Washer, Motor	1	Y
P20	FF-IPA006	Idler Pulley Assembly	1	X
P21	SJY2	Idler Lever Assembly	1	Z
P22	SJY9018	Selector Arm	1	Z
P23	SJY9004-1	Turntable Shaft	1	Z
P24	SJY9002	Plate, TT Shaft	1	Z
P25	FF-MCP089-5	Capstan, 50Hz	1	○ Y
	FF-MCP089-6	Capstan, 60Hz	1	○ Y
P27	XUC3	Circlip, 3φ	3	Y
P28	XUC4	Circlip, 4φ	2	Y
P29	XUC5	Circlip, 5φ	1	Y
P30	SNE434	Push Nut	3	Y
P31	XXAR3H3	Screw, Capstan	1	Z
P32	SJY9024	Spring, Idler	1	Y
P33	SJY9026	Spring, Selector Arm	1	Y
P34	SJY9058	Spring, Lift	1	Y

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks
P35	SNW412-1	Fiber Washer	2	Z
P36	SNW412	Slide Washer, 4φ	2	Z
P37	SNW622-2	Slide Washer, 6φ	2	Z
P38	SNW522-1	Slide Washer, 5φ	2	Z
P39	XWE4F13B	Spacer, 13φ	2	Z
P40	XWA4B	Spring Washer, 4φ	1	Z
P41	XNG4S	Nut, 4mm	1	Z
P42	SNW392	Slide Washer	3	Z
P43	XYN3+C125	Screw, TT Shaft Plate Mounting	4	Z
P44	XWE3D8	Spacer	4	Z
		CASSETTE TAPE DECK (SJD60)		
1	SYE340	Push Button, REC	1	Y
2	SYE342	Push Button	5	Y
3	SMQ1232	REC Safety Lever	1	Z
4	SMQ662	Spring, REC Safety Lever	1	Y
5	SNE432	Circlip, REC Safety Lever	1	Y
6	SJH30	R/P Head	1	X
7	SJH14	Erase Head	1	X
8	SMQ678	Spring, R/P Head and Flywheel Bracket	2	Y
9	SMQ1360	Spring A, Head Panel	2	Y
10	SMQ1362	Head Base	1	Z
12	SMQ1390	Auto-Stop Lever Assembly	1	Z
13	SMQ1392	Spacer, Auto-Stop Lever	1	Z
14	SMQ1364	Pressure Roller Assembly	1	Y
15	SMQ1366	Spring, Pressure Roller	1	Y
16	SMQ1448	Reel Assembly	2	Y
17	SMQ1348	Tape Counter	1	Y
18	SMQ1056	Counter Belt	1	X
19	SMQ1354	Brake Arm	1	Z
20	SMQ1358	Spring, Brake Arm	1	Y
21	SMQ1394	Spring, Tape Holder	1	Y
22	MHT5PS	Motor	1	X
23	SMQ1386	Motor Pulley w/Screw (XXA2A-3)	1	Y
24	SMQ716	Rubber Cushion, Motor	3	Y
25	SMQ718	Spacer, Motor	3	Z
26	SMQ1378	Motor ON-OFF Switch (S6) SAFETY	1	X
27	SMQ1446	Eject Slide Lever w/Spring	1	Z
28	SMQ1374	Spacer A, Eject Slide Lever	1	Z
29	SMQ1398	Spacer B, Eject Slide Lever	1	Z
30	SMQ1368	Clutch Assembly w/Spring	1	Z
31	SMQ1370-1	Bearing	1	Z
32	SMQ1526	Earth Plate	1	Z
33	SMQ148	Washer, Oil Thrower	2	Z
34	SMQ1402	Nylon Washer	1	Z
35	SMQ686	Flywheel	1	X
36	SMQ1372	Main Belt	1	X
37	SMQ1404	Flywheel Bracket	1	Z
38	SMQ1382-1	FF Arm Assembly w/Spring	1	Z
39	SMQ1406	Brake Operating Plate	1	Z
40	SMQ1408	Rewind Arm w/Spring	1	Z
41	SMQ1386	Rewind Idler	1	Z
48	SMQ1528	Bracket, Amp. Switch	1	Z
49	SMQ1380	Tape Amp Switch (S5)	1	X
50	SMQ1422	REC Slide Lever	1	Z
51	SUS178-1	Spring Plate, REC Switch	1	Y
52	SMQ1426	Spacer, REC Slide Lever	1	Z
53	SMQ1428	Shaft, FF and Rewind Lever	1	Z
54	SMQ1430	Rewind Lever	1	Z
55	SMQ1432	FF Lever	1	Z
56	SMQ1434	Nylon Washer, 6.1φ	1	Z
57	SMQ1436-1	Kick Lever, Auto-Stop	1	Z
58	SMQ1438	Spacer, Kick Lever	1	Z
59	SMQ1530	Play Lever	1	Z
60	SMQ1524	Spacer, Play Lever	1	Z
61	SMQ1444	Spring B, Head Panel	1	Z
62	SUS192	Spring Plate, REC Operation	2	Y
100	XYN2+C5	Screw 2mm×5	3	Z
101	XSN2+5	Screw 2mm×5, Amp. Switch	1	Z
102	XSS2+5	Screw 2mm×5	1	Z
103	XSN2+10	Screw 2mm×10	3	Z
104	XYN26+5	Screw 2.6mm×5	4	Z
105	XSN26+6	Screw 2.6mm×6	5	Z
106	XSB26+4	Screw 2.6mm×4, Head Panel	2	Z
108	XSN26+10	Screw 2.6mm×10	1	Z
109	XSN3+5S	Screw 3mm×5, Counter Mounting	2	Z
110	XYN26+C6	Screw 3mm×6, REC Spring	1	Z
111	XSN2D6	Screw 2mm×6	1	Z
112	XWE2A6	Washer 2φ	3	Z
113	XWE26D7	Washer 2.6φ, 0.5T	4	Z
150	XUC12FT	Circlip 1.2φ	2	Y
151	XUC15FT	Circlip 1.5φ	2	Y
152	XUCS19	Circlip 1.9φ	1	Y
154	XUC23FT	Circlip 2.3φ	1	Y
155	XUC25FT	Circlip 2.5φ	1	Y
156	XUC32FT	Circlip 3.2φ	3	Y
157	XUC4FT	Circlip 4φ	2	Y

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